U.S. HOUSE OF REPRESENTATIVES
COMMITTEE ON SCIENCE
SUBCOMMITTEE ON SPACE AND AERONAUTICS

HEARING CHARTER

The NASA Workforce:
Does NASA Have the Right Strategy and Policies to Retain and Build the Workforce It Will Need?

Tuesday, June 13, 2006
10:30 am to 12:30 pm
2318 Rayburn House Office Building

Purpose

On Tuesday, June 13th the Subcommittee on Space and Aeronautics will hold a hearing on the National Aeronautics and Space Administration's (NASA) workforce strategy. The hearing will examine whether NASA is taking the steps necessary to ensure that it has the workforce to carry out its plans.

NASA is facing a critical period in ensuring that it has a workforce of appropriate size and with appropriate skills. On the one hand, NASA has several major new undertakings related to the goal of returning to the Moon by 2020; on the other hand, to free up funds for that purpose (among other reasons), it is terminating the Space Shuttle program in 2010, reducing aspects of International Space Station research, and reducing the budget for aeronautics. In addition, NASA never fully reassigned its workforce after canceling earlier projects, such as the Orbital Space Plane. As a result of all these current and pending shifts, NASA estimates that it has about 1,000 employees without sufficient tasks, but at the same time the agency faces a potential surge of retirements in the coming years. To handle its apparent short-term problem, NASA has been offering buyouts to employees, and may lay off employees in the future. The NASA Authorization Act of 2005 (P.L. 109-155) forbids layoffs (officially, Reductions in Force, or RIFs) before March 16, 2007.

The Science Committee has taken steps in recent years both to help NASA put together an appropriate workforce and to review NASA's actions. Most significantly, the Committee passed, and the President signed, the NASA Flexibility Act of 2004 (P.L 108-201), which gave the agency additional authority to offer recruitment and retention bonuses. The law was based on language requested by NASA. Also, the NASA Authorization Act of 2005, required NASA to develop an overall workforce strategy through fiscal year 2011. This plan was released in April, and will be a focus of the hearing. The plan has been criticized by the International Federation of Professional and Technical Engineers (IFPTE), NASA's largest union. The Authorization Act also required NASA to submit a report describing its plans for the Space Shuttle workforce. Finally, the National Academy of Sciences in late April released an interim report on

NASA's workforce. The report was completed before NASA's workforce strategy was released.

Witnesses

Ms. Toni Dawsey, NASA Assistant Administrator for Human Capital Management

Dr. Lee Stone, Legislative Representative, International Federation of Professional and Technical Engineers (IFPTE), and an employee at NASA Ames Research Center.

Dr. David Black, Co-chair, National Academy of Sciences Committee on Meeting the Workforce Needs for the National Vision for Space Exploration; and President and CEO, Universities Space Research Association

Mr. John W. Douglass, President and CEO, Aerospace Industries Association

Overarching Questions

1) Does the NASA workforce currently possess the critical skills that will enable NASA to complete its goals in space and earth science, aeronautics, and exploration?
2) Does NASA have a sound knowledge base upon which to base workforce decisions?
3) Has NASA succeeded in attracting and retaining skilled employees?

Background

NASA currently employs nearly 17,000 permanent Civil Service employees, and more than 40,000 contractors work closely with the agency. By comparison, the aerospace industry as a whole employs 600,000[1] people within the United States.

NASA has said its strategy involves keeping all 10 of its current centers around the country "healthy." As part of this, NASA has sought to ensure that each of the centers contributes to major programs at the agency. This strategy marks a departure from earlier trends that saw Centers specializing in specific areas. The change will require the distribution of key skills to all the Centers, which means some current centers have even more under-employed staff than before and some have fewer.

Issues

Does NASA currently have too many employees and, if so, what should it do about it?

NASA believes it has about 1,000 full-time equivalent (FTE) employees who are underemployed, many of them in aeronautics. NASA uses the term "uncovered capacity"

[1] Aerospace Industries Association. Series 12. Updated 05/08/06. http://www.aia-aerospace.org/stats/aero_stats/stat12.pdf

to describe employees who do not have enough tasks for them to be considered fully employed. The three aeronautics centers – Ames in California, Glenn in Ohio, and Langley in Virginia – have the greatest percentage of their staffs considered "uncovered capacity;" 15 to 30 percent of their staffs, as compared to 5 to 15 percent at other centers. What makes this tricky is that most employees do not work on a single project. Because individual employees may have only a portion of their time uncovered, 1,000 uncovered FTEs does not equate with 1,000 employees with no assigned work. This distinction drives what solutions are available to the agency. Issuing a buyout to an employee who is 90 percent "covered" may deprive the agency of a needed individual while doing little to reduce "uncovered capacity". Alternatively, finding additional work for an employee with few current assignments may not be possible. NASA is currently assessing how the total amount of "uncovered capacity" is distributed among individual employees. The IFPTE, the larger of the two unions representing NASA employees, questions whether the calculation of 1,000 FTEs is accurate and claims that NASA in recent years has changed its lists of which skills are no longer needed, raising questions about whether NASA has a clear sense of which employees should be encouraged to leave (or eventually be laid off).

To reduce its workforce, NASA has instituted three buy-out and early retirement programs since 2004. About 950 employees have taken advantage of those offers to leave the agency, and 1,138 employees have accepted buyouts since 2002. A key question is whether the "right" employees are accepting the buyouts. Is NASA targeting the buyouts to those areas in which it least needs employees, and is it ensuring that its buyouts are not disproportionately accepted by its most skilled employees since they may be most able to find other work?

What is the longer-term outlook for NASA's workforce?

More than 30 percent of NASA's employees are currently eligible for regular or early out retirement. NASA estimates that by 2011, 28 percent of its engineers and 45 percent of its scientists will be eligible to retire. Furthermore, less than 20 percent of NASA's overall workforce is under 40, and less than 10 percent of NASA's scientists are under 40.

This "retirement bulge" comes as NASA will need to ramp up its workforce for its lunar programs. Some of the workforce for those programs will come from shifting employees who are currently working on the Space Shuttle program, which is scheduled to be terminated in 2010, especially since the new lunar vehicles will use elements of the Space Shuttle. But there are still questions of whether NASA will have the young, creative workforce it needs to carry out the new programs.

Does NASA have the data and information systems it needs to judge the adequacy of its workforce?

NASA has developed a Competency Management System (CMS) to track its workforce through two databases, one that tracks the skill requirements of all of the agency's

positions, and another that tracks the multiple skills of each employee. These databases, which NASA is still in the process of implementing, should allow NASA to match employees to positions that need their particular skills. The IFPTE argues that the CMS produces misleading results, in part because it only takes into account the primary competency required for an employee's position. Yet most employees work on more than one task and have more than one set of skills. NASA has said in response that eventually the system will be sophisticated enough to account for more than just primary position competencies.

The union also argues that NASA's method of "full-cost accounting" exaggerates the cost of carrying employees and leads NASA to believe it has more "uncovered capacity" than is actually the case.

Has NASA made adequate and appropriate use of its special authorities to attract and retain employees?

The NASA Flexibility Act gave NASA additional authority, including the ability to offer larger recruitment and retention bonuses, beyond that of other federal agencies. NASA pressed Congress to get this authority, but so far the agency has made very limited use of the authority. For example, it awarded only 35 recruitment bonuses under the Act in fiscal 2005, despite hiring 324 employees. The IFPTE complains that NASA has given disproportionate bonuses to its Senior Executive Service (SES) employees, as opposed to rank-and-file scientists and engineers, compared to other federal agencies. NASA says it will make greater use of the Flexibility Act in the future as it undertakes more hiring.

Should NASA begin to hire more employees for limited terms as opposed to traditional Civil Service hiring?

NASA has said that in the future it will hire more employees for limited terms rather than add them to the traditional Civil Service workforce. NASA argues that this will provide greater flexibility and will not saddle the agency with excess employees once a project has ended. The IFPTE, on the other hand, worries that reliance on term employees will prevent NASA from developing deep, ongoing expertise in key areas. It also expresses concern that term employees, who will lack Civil Service protections, will be less willing to speak out or question management decisions, potentially allowing unsafe practices to develop without comment.

What mix of in-house and contractor employees should NASA use?

NASA Administrator Michael Griffin has said that NASA has become too dependent on outside contractors, hollowing out some of the skills the agency needs in-house to oversee and evaluate programs. The National Academy of Sciences' interim report also questions whether NASA currently has sufficient skills inside the agency, and, not surprisingly, the IFPTE has raised similar concerns. How will NASA decide the extent to rely on contractor employees for its upcoming plans? Will NASA's workforce strategy enable the agency to have sufficient expertise in-house?

Does NASA's workforce strategy provide Congress and the public with the information it needs?

The strategy document released in April describes in general the skills the agency believes will be important for implementing NASA's new programs, but it does not detail how many employees will be needed overall or for specific programs or how NASA would go about achieving such numbers. . The National Academy of Sciences interim report recommended that the agency develop "policies and procedures to anticipate" changing skill requirements beyond the current problem of "uncovered capacity."

Witness Questions

The witnesses were asked to address the following questions in their testimony:

Ms. Toni Dawsey

1) Do the centers continue to have uncovered employees and does the agency expect further action to reduce the number of employees? If so, how will those reductions be pursued?
2) How has NASA ensured that employees with critical skills are not accepting buyouts? How has NASA identified those critical skills?
3) What are the critical skills that are hiring priorities for the agency? How does NASA know which skills are most needed?
4) Why has NASA not made greater use of the hiring authority granted by the NASA Flexibility Act?

Dr. Lee Stone

1) What are your concerns regarding NASA's released workforce strategy?
2) How has NASA ensured that employees with critical skills are not accepting buyouts? How has NASA identified those critical skills?
3) What are the critical skills that are hiring priorities for the agency? Do you think NASA has a good sense of which skills it most needs? What additional steps ought NASA be taking to make such an assessment of its needs?
4) Has NASA been making sufficient use of the hiring authority granted by the NASA Flexibility Act?

Dr. David Black

1) What are the critical skills that will enable NASA to complete its goals in space and earth science, aeronautics, and exploration?
2) What decisions must NASA make now to prepare for its future workforce needs?
3) Does NASA's current workforce strategy fulfill the needs identified by the NRC interim report?
4) What are the tradeoffs associated with completing work in-house at NASA or contracting them out?

Mr. John W. Douglass

1) What are the critical skills that will enable NASA to complete its goals in space and earth science, aeronautics, and exploration?
2) What are the tradeoffs associated with completing work in-house at NASA or contracting them out?
3) Does the industry have the capacity to successfully absorb additional work from NASA?
4) What trends in the aerospace industry should affect NASA's workforce planning?

Appendix A

Excerpt from the NASA Authorization Act of 2005 (P.L. 109-155)

§101 (f) Workforce.--

(1) In general.--The Administrator shall develop a human capital strategy to ensure that NASA has a workforce of the appropriate size and with the appropriate skills to carry out the programs of NASA, consistent with the policies and plans developed pursuant to this section. Under the strategy, NASA shall utilize current personnel, to the maximum extent feasible, in implementing the vision for space exploration and NASA's other programs. The strategy shall cover the period through fiscal year 2011.

(2) Content.--The strategy developed under paragraph (1) shall describe, at a minimum—

(A) any categories of employees NASA intends to reduce, the expected size and timing of those reductions, the methods NASA intends to use to make the reductions, and the reasons NASA no longer needs those employees;

(B) any categories of employees NASA intends to increase, the expected size and timing of those increases, the methods NASA intends to use to recruit the additional employees, and the reasons NASA needs those employees;

(C) the steps NASA will use to retain needed employees; and

(D) the budget assumptions of the strategy, which for fiscal years 2007 and 2008 shall be consistent with the authorizations provided in title II of this Act, and any expected additional costs or savings from the strategy by fiscal year.

(3) Schedule.--The Administrator shall transmit the strategy developed under this subsection to the Committee on Science of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate not later than 60 days after the date on which the President submits the proposed budget for the Federal Government for fiscal year 2007 to the Congress. At least 60 days before transmitting the strategy, NASA shall provide a draft of the strategy to its Federal employee unions for a 30-day consultation period after which NASA shall respond in writing to any written concerns provided by the unions.

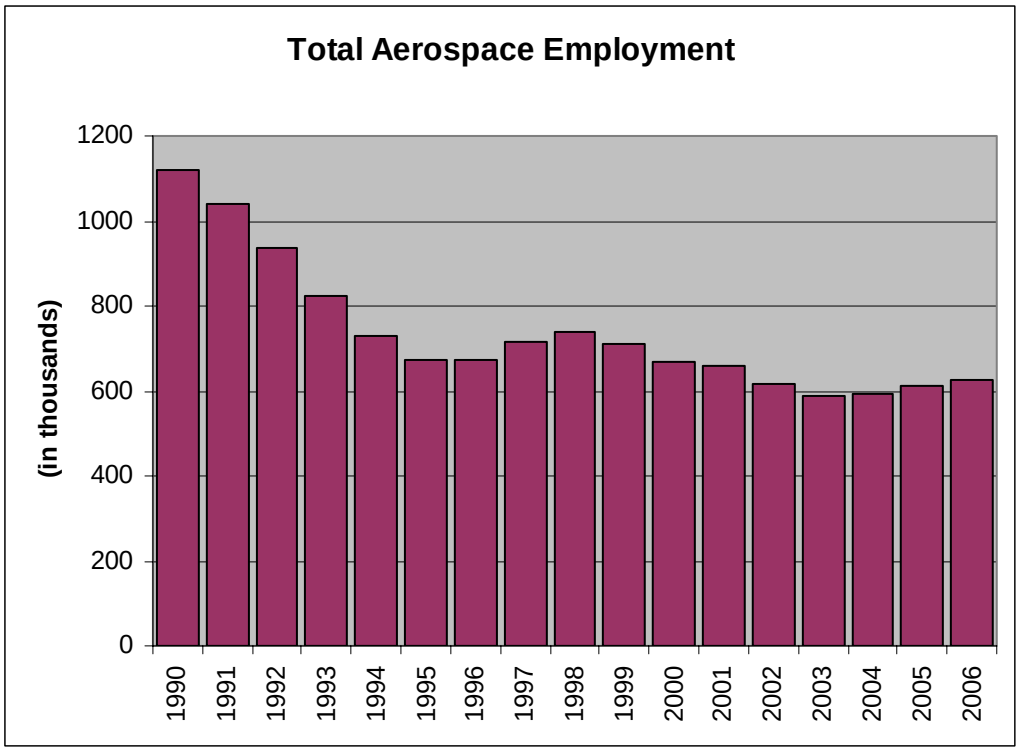
(4) Limitation.--NASA may not implement any Reduction in Force or other involuntary separations (except for cause) prior to March 16, 2007.

Figures

NASA Employee History

Year	Full-Time Permanent		Part-Time Permanent		Term		Temporary		Other	
FY1994	23,499	92.7%	215	0.8%	22	0.1%	90	0.4%	1527	6.0%
FY1995	22,218	93.6%	188	0.8%	23	0.1%	67	0.3%	1240	5.2%
FY1996	20,671	94.2%	172	0.8%	29	0.1%	71	0.3%	998	4.5%
FY1997	20,089	94.7%	168	0.8%	85	0.4%	123	0.6%	738	3.5%
FY1998	18,790	94.1%	170	0.9%	316	1.6%	102	0.5%	580	2.9%
FY1999	17,710	93.4%	167	0.9%	487	2.6%	73	0.4%	527	2.8%
FY2000	17,703	94.6%	202	1.1%	221	1.2%	30	0.2%	550	2.9%
FY2001	17,809	94.6%	200	1.1%	190	1.0%	28	0.1%	605	3.2%
FY2002	17,932	94.2%	193	1.0%	220	1.2%	30	0.2%	651	3.4%
FY2003	17,943	94.6%	193	1.0%	181	1.0%	29	0.2%	616	3.2%
FY2004	17,876	93.8%	193	1.0%	280	1.5%	58	0.3%	659	3.5%
FY2005	17,738	91.7%	180	0.9%	504	2.6%	144	0.7%	780	4.0%
FY2006	16,758	89.6%	162	0.9%	864	4.6%	113	0.6%	798	4.3%

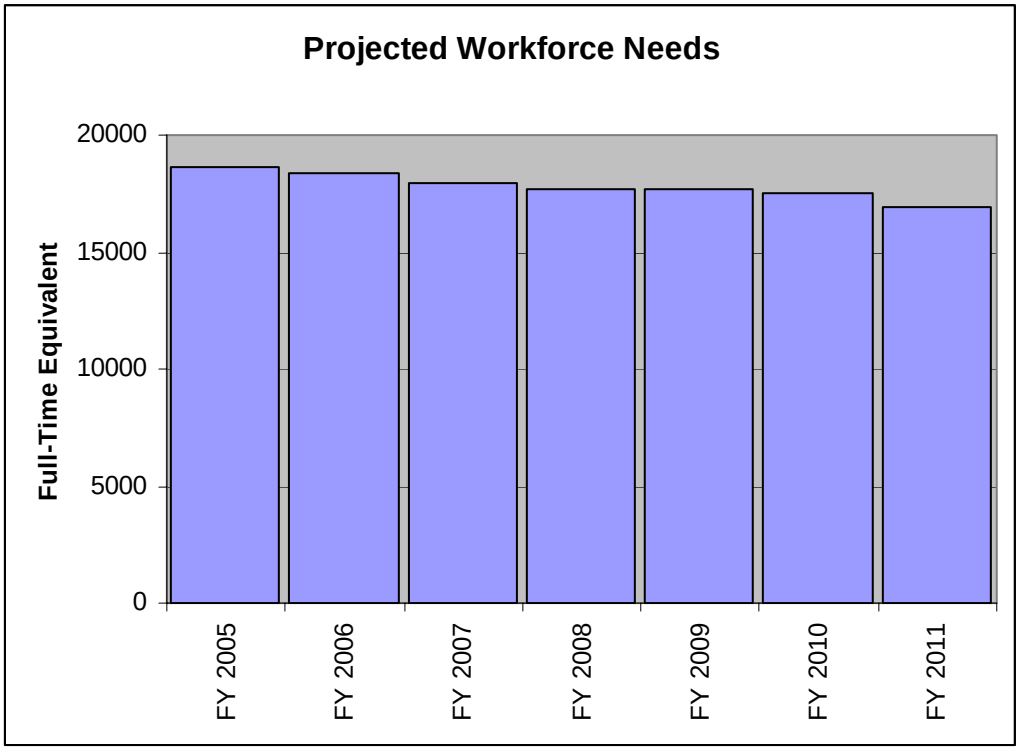
Source: Provided by NASA Human Resources



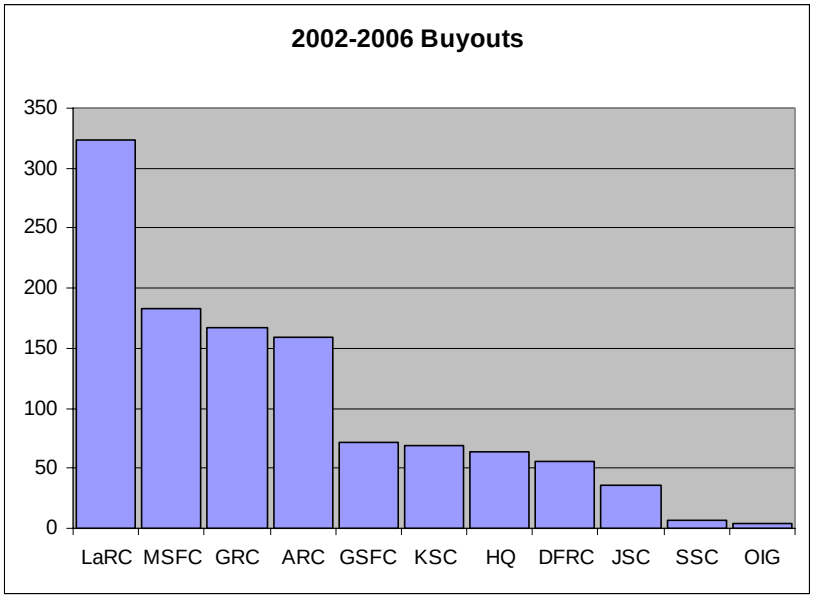
Source: Aerospace Industries Association. Series 12. Updated 05/08/06. http://www.aia-aerospace.org/stats/aero_stats/stat12.pdf

Full-Time Equivalent Projections											
	HQ	ARC	GRC	LARC	DFRC	GSFC	MSFC	SSC	JSC	KSC	NSSC
FY 2005	1397	1380	1821	2130	524	3303	2668	294	3126	1981	0
FY 2006	1390	1284	1700	1963	488	3332	2600	284	3237	2082	50
FY 2007	1300	1193	1562	1839	488	3223	2600	284	3262	2107	121
FY 2008	1300	1070	1428	1749	488	3223	2600	284	3262	2107	146
FY 2009	1300	1070	1428	1749	488	3223	2600	284	3262	2107	157
FY 2010	1300	1070	1428	1749	488	3223	2500	284	3172	2107	159
FY 2011	1300	1070	1428	1749	488	3223	2400	284	2905	1902	159

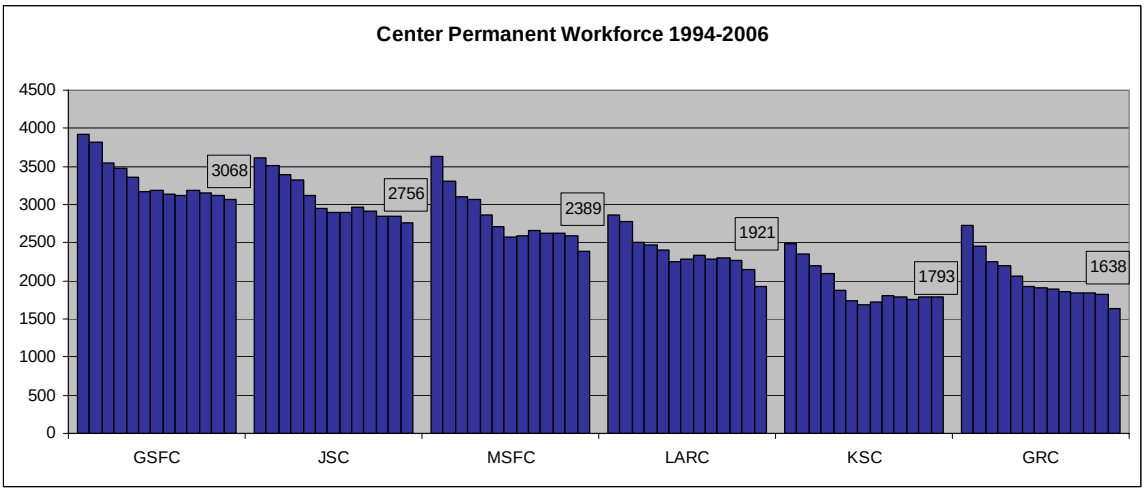
Source: NASA 2006 Workforce Strategy

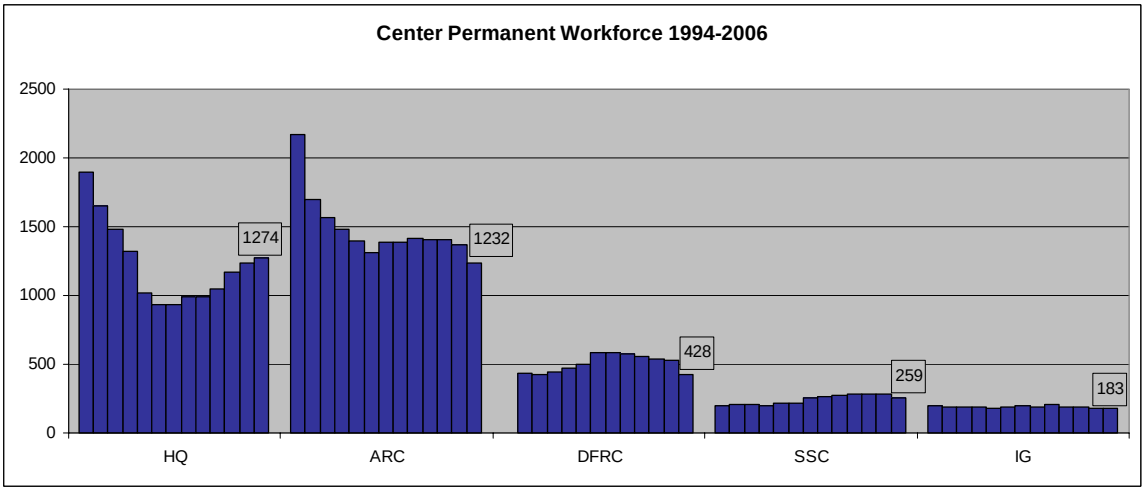


Source: NASA 2006 Workforce Strategy



Source: NASA Workforce, http://naade02.msfc.nasa.gov/workforce/





Source: NASA Workforce, http://naade02.msfc.nasa.gov/workforce/

Acronyms

ARC – Ames Research Center, CA
DFRC – Dryden Flight Research Center, CA
GRC – Glenn Research Center, OH
GSFC – Goddard Space Flight Center, MD
HQ – NASA Headquarters, DC
IG – Inspector General, DC
JSC – Johnson Space Center, TX
KSC – Kennedy Space Center, FL
LaRC – Langley Research Center, VA
MSFC – Marshall Space Flight Center, AL
NSSC – NASA Shared Services Center, AL
SSC – Stennis Space Center, MS